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ABSTRACT

This study was designed to investigate the influence of television on the lives of young people and the correlation between home computer programming, the playing of video games at home, and the playing of arcade games out of the home related to self-esteem and locus of control. Subjects were 405 students in grades 4 through 12 from 21 classrooms in 6 separate schools. Subjects completed the Self-Esteem Inventory and Locus of Control instrument and also completed questionnaires asking for age; gender; school; grade; and time spent watching television, playing arcade games, and playing computer/video games. Copies of daily television schedules were distributed to subjects who then checked specific shows they had watched. The findings revealed that most students watched television daily for 3 hours or more on weekdays. Weekend viewing was not examined. When the 79 students who reported watching no television during the week were eliminated, the mean time for the group approached 4 hours per day. Self-esteem scores were not significantly related to time spent in watching television, playing arcade or home video games, or in programming home computers. External locus of control seemed related to time spent in playing arcade games or in home computer programming. Subjects who participated extensively in playing arcade games or in working with the home computer seemed more externally locused than did other subjects. (NB)

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FINAL REPORT

AACD Foundation Research Project

Measured Self-Esteem and Locus of Control of Students Related to Video Game, Home Computer, and Television Viewing Involvement.

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INTRODUCTION

The importance of self-esteem and an internal locus of control in children cannot be over-emphasized. Clemes and Bean (1981) found that children with high self-esteem act positively, assume responsibility, tolerate frustration well, feel able to influence their environments, and are proud of their deeds. Children with low self-esteem are easily led by others, easily frustrated, blame others for their shortcomings, and avoid difficult situations.

A number of studies have looked at the relationship between self-esteem and academic performance. Kifer (1973) found a correlation of .50 between grades and self-esteem scores for seventh graders. Bloom (1977) found the academic disparity between high and low achievers grew greater if low self-esteem was also present. Numerous other studies could be cited but the point is that self-esteem cannot be divorced from academic performance for most students.

Locus of control is another important variable in the lives of students. Gordon (1977) found that an internal locus of control orientation among fourth graders was significantly related to both academic achievement and self-esteem.

The influence of television on the attitudes and actions of young people has received a great deal of notice in the popular press over the last decade. Numerous assertions by psychiatrists, educators, and spokespersons for professional associations have succeeded in (1) documenting the fact that young people (as well as older ones) watch television for many hours per day, and (2) that specific television shows seem to have had undue negative influences on certain individuals. This is usually asserted after an individual has committed a crime of spectacular proportions.

However, despite the assumptions and charges, we have little hard data that demonstrate the influence of television on larger groups of apparently "normal" children.

The present project was drafted in an attempt to look more closely at the influence of television on the lives of young people. Locus of control and self-esteem measures were chosen for study as they would seem as likely to be impacted by television as any area of one's life. In addition, we decided to look at the correlation between home computer programming, the playing of video games at home, and the playing of arcade games out of the home related to the two variables noted. The explosion of technology has given most young people new participation activities not generally available to us a decade ago--such as using home computers.

Although we had informal hypotheses about possible findings from this study, no formal ones were posed. Thus, the study should be viewed as tentative, heuristic, and descriptive in nature.

METHOD

The steps taken to complete the project will be briefly outlined. We first contacted school superintendents or their designated administrators to receive permission to conduct our study in specific schools. Five districts were originally contacted with two of them declining our invitation to participate in the project. Two district superintendents gave their approval to contact principals of schools with the decision resting with the principals as to their participation. One superintendent sought approval from this Board of Education and it was given. We ended up with seven schools approved for participation; however, one school delayed sending permission slips to parents for so long that we could not involve them further. Thus, about 430 students in 21 classrooms in six separate schools eventually became participants in this study.

We tailored permission slips to meet the desires of each building principal. Some required that parents give permission for their children to answer our questionnaire and other instruments. Others had parents sign a form only if they did <u>not</u> want their children to participate. A sample of the permission form is attached.

After going through the various permission stages, we were ready to actually work with students. We had three assistants who went to each classroom in turn. They administered a questionnaire that asked for age, gender, school, grade, plus questions regarding time spent watching television, playing arcade games, and in playing computer/video games.

After the questionnaires were completed the assistants distributed xeroxed copies of daily television schedules and had students check specific shows they had watched during the previous day. A quick individual interview with each child was used to confirm what had been reported. An average amount of time was totaled and checked for each student in regard to his/her television viewing habits. A verbal check was used to confirm data regarding other activities. Each assistant had only a few students in each classroom to work with at any one time.

Next, Self-Esteem Inventory (SEI) and Locus of Control (LC) instruments were administered. Again, the assistants were on hand to answer questions as needed. Copies of the instruments are attached.

No student was identified by name. The total packet of materials for each child was numbered. These materials were scored and coded for entry on the computer. We listed age, grade, sex, minutes spent daily in each of the activities, and SEI and LC scores.

Instruments

The Self-Esteem Inventory (Coopersmith, 1967) was

selected as it has (a) previously demonstrated high reliability, (b) showed good predictive ability in forecasting academic performance (.67 and .64 with earned grades), and (c) correlated highly with teacher behavioral ratings (Wiggins, 1978). Higher scores are indicative of higher self-esteem.

The Locus of Control (LOC) instrument was one adapted for students by Hermes (1984). It has had good test-retest reliability (.87 to .91 over four weeks) and was highly correlated with Rotter's instrument (.88). Low scores indicate an internal orientation and high scores an external locus of control.

The questionnaire simply asked for sex, grade, and other data related to time involved in viewing television, programming home computers, playing home video games, and playing arcade games.

RESULTS

A total of 405 students completed all instruments completely from a total of about 430 participants. Table 1 depicts the number by sex and grade level. Table 2 delineates the mean number of minutes spent daily in the various activities as well as listing mean self-esteem and locus of control scores.

(Insert Tables 1 and 2 here)

Means and standard deviations were also determined by grade level and sex. These are delineated in Table 3. The differences by grade level (ages) in various activities were large in several areas.

(Insert Table 3 here)

Table 4 provides correlational data among and between study variables. The statistically significant relationships were not surprising. Locus of control and self-esteem scores were highly correlated and external locus of control was related at a high level to both arcade game playing ($p > .05$) and home computer programming ($p > .02$).

Correlation coefficients were also computed by sex for the total group and by sex and grade levels for the various sub-groups. There were, surprisingly, no significant deviations from results for the total group despite the likelihood that this would happen by chance alone when so many variables are used.

As inferred from the very large standard deviations for minutes spent in various activities, the means for the total group did not reflect an accurate picture. This was due to the fact that a large majority of students did not play arcade games, program home computers, or play videogames at all during the week of the study. In fact, only 66 of the 405 students played arcade games at all, 56 had done programming-type activities on a home computer, and 60 had played videogames. In contrast, 326 of the 405 students had watched television; 79 had not during the week in question.

Although not representative of the total group, we then looked at each of the sub-groups in turn. It should be noted that the populations were overlapping; that is, the students who

played arcade games also comprised most of the group who played home videogames as well as using a home computer for programming activities.

First, when we looked at the 326 member sub-group that had watched television, no significant differences were observed on other variables; i.e., self-esteem and locus of control scores as well as minutes spent in other activities were about the same as for the total group. The only increase (a redundant finding) was in viewing television itself--an increase from a mean score for the group from 187 to 232 minutes per day. Thus, students who watched television did so almost four hours per day during weekdays.

A different picture emerged of the other smaller sub-groups. The means by sub-group for their time involvement by activity is delineated in Table 5. As noted, time involvement for these sub-groups differed substantially from the means for the total group. (The overlapping membership of each group suggests these data be viewed with caution.)

Finally, we looked at the 79 students who had not watched television during the previous week. They had also not played arcade or home videogames nor had they been involved in home computer programming activities to any significant degree. Self-esteem scores were not higher to any significant extent nor were locus of control scores more internal in nature. This sub-group just had a different time involvement than most of their peers.

DISCUSSION

It would be easy to overinterpret the data available and caution is urged in looking at the results. However, some items seem quite clear. First, most students watch television daily for three hours or more on weekdays. We did not investigate weekend viewing habits at all. When we eliminate students who did not watch television during the week, the mean time for the group approached four hours per day. While we may infer many things from the data, e.g., this may interfere with homework from school, or that children may read less if they watch television so much, such conclusions go far beyond the scope of the study. We do not know.

Next, there are sub-groups (about one child in six belongs to one) that are very much involved in activities such as playing arcade or home videogames, or in home computer programming activities. The children involved in any one of those activities tended to also be more involved in another one as well as in watching television more than their peers. Again, conclusions reached from the data is conjectural in nature.

The heart of the study revolved around self-esteem and locus of control scores related to time involvement in the various activities. The means for the total group and for the various sub-groups were very near the means reported for the Self-Esteem Inventory in other studies. For example, Donaldson (1974) reported a mean score of 63.8 for 643 students in grades 3 through 8. Kimball (1972) found means near 66-68 for 7,593

students in grades 4 through 8. Reed (1972) found a lower mean near 57 for males and 63 for females in grades 2, 3, and 5. Unpublished studies by graduate students under the direction of the director of this project have found means ranging from 62 to 66 for various high school and elementary school students. Thus, the means for the total group and the various sub-groups seem in line with other reports.

Contrary to informal hypotheses posed by the director and others involved in the study, self-esteem scores were not significantly related to time spent in watching television, playing arcade or home videogames, or in programming home computers. Specific individuals may be unduly influenced in the self-esteem area but we did not find that true of the group as a whole.

The only expected finding was that external locus of control seemed related to time spent in the playing arcade games or in home computer programming. Strangely enough to the researchers, this did not hold true for home videogame playing. While we cannot talk of cause-effect relationships, persons who participate extensively in playing arcade games or in working with the home computer seem more externally locused than other members of the group. The reasons for this are conjectural and we get into a "chicken or egg" quandary. That is, do children with a higher external locus participate more in those activities or does participation influence students toward that direction.

Summary and Conclusion -- The results of the study may seem disappointing to people whose views toward watching televison to any large extent is a negative one (I confess to such a prejudice). The same holds true for the other activities studied. It may be that these have become such an accepted part of our culture that we cannot sort out the negative impact on us; we may all (as a group) be negatively affected. However, no evidence has been found to support that view.

We have tended to blame television viewing for societal ills. However, this cannot be separated from other aspects of family life. The attitudes held by parents who allow children to watch television three hours or more on weeknights certainly may be as important as the material viewed on the screen. We can pose a hypothetical question;"What would happen to children if the television were turned off, if parental attitudes remained unchanged, and/or if there were no positive activities to replace it?" Again, we do not know. At any rate, we are unlikely to find out as our habits seem unlikely to change in the near future.

While we wish that all children had high self-esteem and an internal locus of control, it seems clear that we must continue to investigate causes, correlations, and effects. This study has simply looked at relatively global concerns. More sophisticated--and costly--methods seem needed. We need to look at specific interventions designed to raise self-esteem that go beyond the elimination of activities such as watching television. Affective education and counseling activities seem to be one proven way to do this (Wiggins and Giles, 1984).

The project was worthwhile if it only serves to make us rethink our own views toward facts of modern life. It has affected us involved in the project in that way and will help us refine our future work in that area.

Table 1

Sex and Grade Levels of Participants (N = 405)

Sex	Grade Levels					
	4	6	8	10	12	totals
Females	20	71	31	50	19	192
Males	29	68	34	45	38	213
Totals	49	139	65	95	57	405

Table 2

Minutes Spent Per Day In Activities Studied
Plus Mean Self-Esteem and Locus of Control Scores (N = 405)
(Standard Deviations Also Included)

Variables	Females (n=192) $\bar{x}$	SD	Males (n=213) $\bar{x}$	SD	Totals $\bar{x}$	SD
Watching TV	203		173		187	160
Playing Arcade Games	7.10		13.23		10.33	28.97
Programming Home Computer	6.18		7.61		6.91	23.07
Playing Home Video Games	5.42		9.79		7.70	24.97
Self-Esteem Scores	61.63		62.73		62.29	18.67
Locus of Control Scores	10.65		10.64		10.65	3.36

Table 3

Minutes Spent Per Day in Activities Studied Plus
Mean Self-Esteem and Locus of Control Scores
by Sex and Grade Level (N = 405)

Variables	Grade 12		Grade 10		Grade 8		Grade 6		Grade 4	
	F	M	F	M	F	M	F	M	F	M
Watching TV	189	153	199	111	235	156	207	219	163	209
Playing Arcade Games	12.63	6.48	8.40	6.67	4.84	22.06	6.55	19.19	4.50	7.76
Programming Home Computer	4.74	3.24	3.30	3.67	4.84	10.15	8.24	7.50	9.50	16.65
Playing Home Video Games	3.16	2.89	1.20	7.67	7.26	13.68	8.03	12.79	6.00	10.35
Self-Esteem Score	72.62	62.92	63.68	63.56	60.77	65.71	57.24	57.35	63.00	70.35
Locus of Control Scores	9.63	10.84	10.49	10.34	10.61	10.77	11.09	11.34	10.55	9.03

Table 4

Pearson Correlation Coefficients for Study Variables (N = 405)

	TV Viewing	Arcade Game Playing	Home Computer Programming	Home Videogame Playing	Self-Esteem Scores	Locus of Control Scores
TV Viewing	1.000	.064	.090*	.020	-.046	.039
Arcade Game Playing		1.000	.293***	.497***	-.075	.082*
Home Computer Programming			1.000	.458***	-.046	.102**
Home Videogame Playing				1.000	-.049	-.001
Self-Esteem Score					1.000	-.244***
Locus of Control Score						1.000

* p .05
** p .02
*** p .001

Table 5

Mean Involvement Time in Study Activities
Plus Self-Esteem and Focus of Control Scores
for Selected Sub-Groups

Arcade Sub-Group (n=66)	$\bar{X}$	Home Computer Programming Group (n=56)	Home Videogame Playing Group (n=60)
Television Viewing	224	217	234
Playing Arcade Games	63.41	35.09	41.75
Home Computer Programming	21.52	50.00	28.00
Home Videogame Playing	31.60	35.63	52.00
Self-Esteem Score	59.85	61.75	60.37
Focus of Control Score	11.11	11.09	10.43

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SAMPLE FORM

May 1, 1985

Dear Parent or Guardian:

We are looking at the television viewing habits of young people as well as the time spent by them in playing video games and in using computers. We also want to look at how students feel about themselves related to those areas. We have received a grant from the American Association for Counseling and Development to study these items.

Total time involvement with students will be a single classroom period. A questionnaire format will be used for all measures. No names will be used to assure anonymity.

We will be conducting these activities in the next two weeks. If you have any questions or objections please feel free to contact one of the Field Assistants below. If you would not like your child to take part in the research, please detach and submit the form below.

Sincerely,

James D. Wiggins	Marilyn B. Fricke	Karen Foley
Project Director	Field Assistant	Field Assistant
	368-3357	738-1991

Kathleen S. Johnson
Field Assistant
239-2297

Dear Principal,

I have read the above and prefer not to have _____ participate in the
(name of child)
in the AACD study outlined above.

_____
(parent/guardian signature

Please return the form by May 6 unless you agree to have your child participate. No further action is necessary for participation.